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ABSTRACT

This report investigated two hypotheses: 1) junior high school teachers with concrete belief systems would assign more unsatisfactory citizenship grades and lower academic grades than more abstract teachers; and 2) the correlation between citizenship and academic grades would be higher for concrete than abstract teachers. Ten teachers from McKinley Junior High School, Flint, Michigan, were divided into two groups. The first group consisted of five teachers who had assigned the greatest number of satisfactory citizenship grades; the second group contained five teachers who had assigned the greatest number of unsatisfactory citizenship grades. Each teacher's level of conceptual differentiation was assessed by the semi-projective This I Believe test (TIB). Subjects grouped under System 1 had concrete belief systems and subjects grouped under Others had abstract belief systems. Statistical analysis revealed a positive correlation between academic and citizenship grade assignment and teachers' belief systems. However, there was a higher correlation between academic and citizenship grades assigned by System 1 teachers than by Others. Analysis revealed that Hypothesis 1 was directionally significant at the .05 level but the relationship was not as strong as the others tested. Six tables of statistical data were included. (BRB)

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Abstract

It was hypothesized that junior high school teachers with concrete belief systems would assign more unsatisfactory citizenship grades and lower academic grades than more abstract teachers. It was further hypothesized that the correlation between citizenship and academic grades would be higher for concrete than abstract teachers. All hypotheses were confirmed.

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TEACHERS' BELIEF SYSTEMS AND GRADING PRACTICES

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In the last several years there has been growing concern with the importance that our society places upon formal credentials. Thus, Dailey (1971) observes, "Credentials determine one's access to numerous freedoms and opportunities; they influence, often determine, the decisions that permit access to those opportunities and freedoms." (Dailey, 1971, p. 11). Among those credentials which have the greatest and most enduring impact upon the individual's life are the "grades, credits, diplomas and degrees" (Dailey, ibid) administered by our educational institutions. In this regard, Kahl (1965) comments

> ". . . the school system has become the major institution not only for training people, but also for selecting and placing them. A man starts in the occupational world according to the level he has achieved in the educational world." (Kahl, 1965, p. 293).

An unfortunate feature of a credential-oriented system is that access to one set of credentials depends upon prior attainment of an earlier set. Thus, admission to colleges and universities depends largely upon the grades received in secondary school. Borup (1969), for example, indicates that

high school grade point average is the single most frequently used variable in predicting college success. Moreover, this reliance upon academic performance in secondary school is supported by evidence that high school grade point average is a more valid predictor of overall college performance than most widely-used entrance examinations (Passons, 1967; Borup, 1971).

Predictive validity, however, assumes an infallible criterion; thus, high validity coefficients may simply indicate a substantial correlation between meaningless predictors and equally meaningless criteria. In this regard, Ericksen (in press) indicates that college grades may actually assess neither a student's ability nor his achievement. Considering the impact which grades may have upon a student's subsequent opportunities, evidence such as this has precipitated widespread dissatisfaction with traditional marking systems and prompted a major review of many basic educational assumptions. In this connection, some investigators have examined the possible influence of teacher variables upon assignment of grades. Rosenthall and Jacobson, (1968), for example, have provoked considerable controversy with their evidence concerning the effects of teacher expectations and the "self-fulfilling prophesy" upon student evaluation. Their conclusions have not been supported by replication, however, and Fleming and Anttonen (1971) thus conclude that "The external imposition of an expectancy which creates dissonance for a teacher where she is confronted with discrepant behavior. . . appears not to reflect itself in improved student performance.

While evaluation of student performance may not, therefore, be influenced by experimental manipulation of teachers' expectations, it is nonetheless possible that grading practices are influenced by teacher personality, or individual difference, variables. One such dimension, which recent studies have related to other educationally important aspects of the classroom experience, is abstractness-concreteness, as conceptualized in Harvey, Hunt and Schroder's (1961) theory of conceptual differentiation. Harvey, White et al (1966), for example, found that teachers with abstract belief systems promote a classroom atmosphere that is more resourceful, less punitive and less dictatorial than that created by teachers with concrete belief systems. Furthermore, Harvey, Prather et al (1968) found that students of teachers representing System 1, the most concrete of the belief systems identified by Harvey, Hunt and Schroder, were significantly less involved, less active and less achievement oriented than students of teachers representing more abstract systems.

While these data are based largely upon kindergarten and first grade classes, they nonetheless suggest that a teacher's belief system may substantially influence both classroom environment and student behavior. In the more structured setting of secondary school, we might therefore expect to find such systemic differences manifested in the teacher's expectations and evaluation of student conduct and academic performance. On this basis the present study examined the relationship of grading practices to abstractness-concreteness in a group of junior high school

teachers. Prior research (e.g., Harvey, 1970; Harvey, Prather, et al, 1968) has indicated a paucity of elementary and secondary teachers representing System 2, and our hypotheses were therefore formulated in terms of differences between System 1 teachers and others rather than between concrete teachers (Systems 1 and 2) and abstract teachers (Systems 3 and 4).

One of the most salient characteristics of the System 1 representative is his inflexible rule-orientation and his sensitivity to the behavioral demands involved in authority relationships (Harvey, 1966, 1967). System 1 teachers should therefore respond with greater severity than other teachers to such disciplinary matters as lack of co-operation, violation of rules, disrespect for institutional authority and other aspects of students "citizenship." Thus, we hypothesized that System 1 teachers assign more unsatisfactory citizenship grades than other teachers.

In addition to his commitment to the sanctity of authority and power relationships, the System 1 representative is more absolute in his expectations and evaluations of other persons than are representatives of other systems (Harvey, 1967; White and Harvey, 1965). Moreover, the concrete individual is more inclined to exaggerate the unacceptability of information with which he disagrees if that information is presented by a low authority-status source (Harvey, 1963). We also hypothesized, therefore, that System 1 teachers assign relatively more low academic grades and fewer high

academic grades than teachers representing other belief systems.

Finally, Harvey, Reich and Wyer (1968) demonstrated that concrete Ss are less able than abstract Ss to make conceptual differentiations under conditions of high ego-involvement. Assuming that student conduct and academic performance are of central personal and professional importance to a teacher, we hypothesized that System 1 teachers are less able than more abstract teachers to evaluate scholarship independently of citizenship and therefore more inclined than other teachers to assign low academic grades to students who have displayed poor citizenship.

Method

Subjects

All subjects were teachers at McKinley Jr. High School, Flint, Michigan. The sample included the five teachers who, in the semester preceding the study, had assigned the greatest number of unsatisfactory citizenship grades and the five who had assigned the greatest number of satisfactory citizenship grades.

Instruments

Each teacher's level of conceptual differentiation was assessed by the "This I believe" (TIB) test (Harvey, 1966, 1967). The TIB is a semi-projective instrument in which the subject writes two or more sentences in response to each of ten items, such as "This I believe about marriage"

and "This I believe about people." The referents (the American way of life, marriage, religion, people, compromise, friendship, foreign aid, sin, world government, and capital punishment) have been selected on the basis of theoretical ego-relevance, or centrality, to the different systems, because it is assumed by Harvey, et al (1961) that systemic differences are only apparent under conditions of high ego-involvement.

TIB responses are analyzed with respect to both content (direction or valence of beliefs about central referents) and structure (degree of abstractness-concreteness). In this regard, representatives of different conceptual systems manifest different configurations of such structural qualities as absolutism-relativism, naivete-awareness, cliche-originality, openness-closedness, and so forth.

Procedure

Teachers selected on the criteria indicated above were asked by their vice-principal to act as subjects in some "attitude research involving completion of an opinion questionnaire" (the TIB). All Ss agreed to participate, and although tests were administered individually at the participants' convenience, all Ss were given a standard set of written and oral instructions and were permitted two minutes for each item.

The interjudge agreement was 85% for the ten protocols independently analyzed by two trained readers. Ten of the Ss

represented System 1, one represented System 2, two represented System 3, and two protocols indicated admixtures of various systems, predominantly System 3. For purposes of our analysis, Ss were grouped as either "System 1" or "other."

All academic and citizenship grades assigned by these ten teachers in the preceding semester were obtained from class records. Scholarship is evaluated from outstanding to unsatisfactory on a scale of 1 to 5. For purposes of our analysis, academic grades of A or B were considered "high" and D's and E's were considered "low." Similarly, a citizenship grade of 1 or 2 was considered "satisfactory," and a grade of 4 or 5 was considered "unsatisfactory."

Results

To test our hypothesis that System 1 teachers assign more unsatisfactory and fewer satisfactory citizenship grades than other teachers, the joint frequency distribution of citizenship grades and teachers' belief systems was submitted to a χ^2 test of independence. The observed frequencies and the computed value of χ^2 are given in Table 1.

Insert Table 1 About Here

To test the hypothesis that System 1 teachers assign fewer high academic grades and more low academic grades than teachers of other belief systems, the distribution of academic grades assigned by both groups of teachers were

also submitted to a χ^2 contingency test. The frequency distributions and the computed value of χ^2 appear in Table 2.

Insert Table 2 About Here

Our last hypothesis predicted a stronger positive relationship between academic and citizenship grades assigned by System 1 teachers than between academic and citizenship grades assigned by teachers of other systems. To test this hypothesis we computed one value of χ^2 for the four-fold distribution of academic and citizenship grades assigned by each group of teachers. These data appear in Tables 3 and 4.

Insert Table 3 About Here

Insert Table 4 About Here

As predicted, the relationship was stronger for System 1 teachers than for the more abstract teachers. However, both values of χ^2 were significantly greater than zero ($p < .0005$ for a directional hypothesis), and it was therefore necessary to determine whether they were significantly different from one another. To test this difference,

both χ^2 values were transformed to information metric (Attneave, 1959):

$$\text{Number of bits of information} = (\log_2 \sqrt{e}\, \chi^2) - \text{d.f.},$$

where e is the base of the natural logarithm system, approximately equal to 2.71828, and d.f. is the number of degrees of freedom associated with χ^2. For the joint distribution of grades assigned by System 1 teachers, this value is

$$.721(88.91) - 1 = 63.10.$$

For the joint distribution of grades assigned by teachers representing other systems, this value is

$$.721(65.73) - 1 = 46.39.$$

Each of these values represents the information associated with the relationship between citizenship and academic grades and according to Saunders (1970) may be interpreted as remarkability (R). Moreover, the difference between these values represents the information attributable to differences between the groups for which the two χ^2 values were computed. Because our two samples were based upon teachers' belief systems, this net remarkability indicates the degree to which belief systems moderates the relationship between academic grades and citizenship grades.

$$R_{net} = R_{System\ 1} - R_{Others}$$

$$= 63.10 - 46.39$$

$$= 16.71.$$

Saunders (1970) reports that 9.95 bits of information corresponds to $p = .001$, and the difference between our two X^2 values must therefore be significant beyond the .001 level.

Discussion

Of our three hypotheses, the relationship between teachers' belief systems and citizenship grades received the weakest empirical support. Our hypothesis was directional, and the statistic was therefore significant at the .05 level, but the relationship was certainly not as strong as the others which were tested. This lack of relationship may be an artifact introduced by our criteria for selecting subjects, but an alternative explanation seems more likely. In most secondary schools, citizenship grades are largely a formality, and all but the most flagrantly recalcitrant are routinely assigned satisfactory evaluations. While teachers may be highly involved with citizenship, therefore, they might not be particularly involved with citizenship grades. Because systemic differences are generally manifested only in areas of high involvement, therefore, citizenship grades would not distinguish among representatives of different conceptual systems.

The relationship between academic grade assignment

and teachers' belief systems was confirmed. The reader is cautioned, however, that a significant relationship could occur several ways. First, System 1 teachers could be, as conceptual systems theory suggests, inordinately severe in their assignment of grades. It is also possible, however, that more abstract teachers are especially liberal in their grading. In this regard, the cell frequencies in Table 2 confirm our prediction that the most prominent difference between systems was in assignment of low grades. Nonetheless, it should be noted that abstract teachers did assign more than their expected frequency of high grades.

The last hypothesis predicted a higher correlation between academic and citizenship grades assigned by System 1 teachers than by more abstract teachers. In general, of course, we should expect more inattention, frustration, resentment and consequent misbehavior among less able and less interested students. Thus, we should expect a positive relationship between conduct and academic performance irrespective of teacher variables. And, indeed, this relationship was extremely significant for both groups of data. As hypothesized, however, the magnitude of the relationship was significantly greater for grades assigned by System 1 teachers.

Recall that this hypothesis was based upon results indicating that concrete Ss are less able than abstract Ss to make conceptual differentiations in areas of high centrality. It was therefore anticipated that System 1 teachers would be

more punitive in their assignment of academic grades to students who display unsatisfactory citizenship. In this regard, Table 5 includes the academic grade distributions assigned by both groups of teachers to students receiving unsatisfactory citizenship grades.

Insert Table 5 About Here

Although both distributions are highly skewed, the skew is significantly more extreme for System 1 teachers, thus indicating an unfavorable bias against students who misbehave.

While this difference is highly significant, it is only partially responsible for our observed group difference in correlation between academic and citizenship grades. A further source of interaction is found in the distributions of academic grades assigned to students who received satisfactory citizenship grades. In Table 6 we see that both distributions are again skewed. In this case, however, the distribution of grades assigned by our more abstract teachers is the more highly skewed, suggesting that these teachers are somewhat biased in their assignment of grades to well-behaved students.

Insert Table 6 About Here

In our more abstract group, the modal belief system was System 3, and according to Harvey, Hunt and Schroder's

conceptual systems theory, such persons are most highly ego-involved in situations involving close interpersonal relationships. On this basis we might expect some loss of discrimination in assessment of students who get along especially well with the teacher and who therefore receive satisfactory citizenship marks.

Conclusions

The present study demonstrated several significant relationships between teachers' belief systems and their assignment of grades. First, System 1 teachers assigned a greater number of unsatisfactory citizenship grades and low systems. Secondly, there was a higher correlation between academic and citizenship grades for concrete teachers than for abstract teachers. This result was partially attributable to the assignment of inordinately low academic grades to unsatisfactory citizens by System 1 teachers, thus confirming our expectation that concrete teachers are less able than abstract teachers to differentiate poor conduct from poor scholastic performance. There was, however, also evidence suggesting that abstract teachers in our sample were influenced by halo effect and assigned inordinately high academic grades to satisfactory citizens. This may have been a sampling artifact attributable to the predominance of System 3 representatives in our abstract group.

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Footnotes

[1] The author wishes to thank Messrs. Alpheus Green and Eade Jordan of Santa Cruz High School, Santa Cruz, California for their contribution to the hypotheses.

Table 1

Contingency Test for Teachers' Belief Systems and Citizenship Grades

Grades	Belief Systems	
	1	Other
Satisfactory	361	300
Unsatisfactory	86	50

$\chi^2 = 3.60$*

* $p < .05$ for directional hypothesis

Table 2

Contingency Test for Teachers' Belief Systems and Academic Grades

Grades	Belief Systems	
	1	Other
High	229	258
Low	198	76

$\chi^2 = 44.83^*$

* $p < .0005$ for directional hypothesis

Table 3

Contingency Test for Citizenship and Academic Grades Assigned by System 1 Teachers

Academic	Citizenship	
	Unsatisfactory	Satisfactory
High	5	156
Low	57	54

$\chi^2 = 88.91$*

* $p < .0005$ for directional hypothesis

Table 4

Contingency Test for Citizenship and Academic Grades Assigned by Other Teachers

Academic	Citizenship	
	Unsatisfactory	Satisfactory
High	11	210
Low	27	35

$\chi^2 = 65.73$*

* $p < .0005$ for directional hypothesis

Table 5

Contingency Test for Teachers' Belief Systems and Academic Grades Assigned to Unsatisfactory Citizens

Grades	Belief Systems	
	1	Other
High	5	11
Low	57	27

$\chi^2 = 7.93$*

* $p < .005$ for directional hypothesis

Table 6

Contingency Test for Teachers' Belief System and Academic Grades Assigned to Satisfactory Citizens

Grades	Belief Systems	
	1	Other
High	156	210
Low	54	35

$\chi^2 = 9.50$*

* $p < .01$ for nondirectional hypothesis